

Claims

I claim:

1. A tail sitter aircraft, being capable of vertical take off and landing with its nose pointing up, and also being capable of horizontal flight with its nose pointing horizontally, comprising:

a pair of wings providing aerodynamic lift in a horizontal flight;

Four or more propellers, rigidly connected to said wings, whose center axes are in parallel to, or with only small offset angles from, said aircraft's longitudinal center axis, such that full three dimensional attitude control can be achieved with torques produced by varying thrusts from said propellers; each said propeller can generate independent streams of airflow for propelling and stabilizing said aircraft;

a plurality of power plants and transmission means for conveying the rotational energy from said power plants to the said propellers;

control means for coordinating the power generated by the power plants to maintain the balance and stability of said vehicle and to rotate and move said vehicle in any direction.

2. A VTOL vehicle as in claim 1 wherein some or all of said propellers can be folded back during horizontal forward flight.

3. A tail sitter aircraft, being capable of vertical take off and landing with its nose pointing up, and also being capable of horizontal flight with its nose pointing horizontally, comprising:

a pair of wings providing aerodynamic lift in a horizontal flight;

four propellers, rigidly connected to said wings, whose center axes are in parallel to, or with only small offset angles from, said aircraft's longitudinal center axis, such that full three dimensional attitude control can be achieved with torques produced by varying thrusts from said propellers; each said propeller can generate independent streams of airflow for propelling and stabilizing said aircraft;

a plurality of power plants and transmission means for conveying the rotational energy from said power plants to the said propellers;

control means for coordinating the power generated by the power plants to maintain the balance and stability of said vehicle and to rotate and move said vehicle in any direction.

4. A VTOL vehicle as in claim 3 wherein some or all of said propellers can be folded back during horizontal forward flight.